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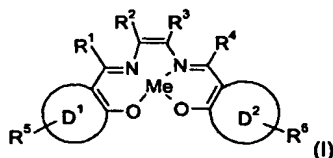
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For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METAL COMPLEXES FOR USE IN OPTICAL RECORDING MEDIA



(57) Abstract: The present invention relates to metal complexes of formula I, composi-
tions comprising the metal complexes, to recording media comprising the metal complexes
or compositions and to the use of the compositions in the production of optical recording me-
dia: wherein the substituent are as defined in the description. Use of the metal complexes of
formula (I) in combination with oxonol dyes results, surprisingly, in a comparatively weak
tendency of the oxonol dyes to aggregate in the solid state so that the absorption curve re-
mains advantageously narrow even in the solid state, as a result of which recording media
having high reflectivity as well as high sensitivity and good playback characteristics in the desired spectral range are made available.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/050706

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G11B7/24 C09B69/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G11B C09B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>LACROIX P G ET AL: "SYNTHESIS AND SECOND-ORDER NONLINEAR OPTICAL PROPERTIES OF NEW COPPER(II), NICKEL(II), AND ZINC(II) SCHIFF-BASE COMPLEXES. TOWARD A ROLE OF INORGANIC CHROMOPHORES FOR SECOND HARMONIC GENERATION"</p> <p>CHEMISTRY OF MATERIALS, AMERICAN CHEMICAL SOCIETY, WASHINGTON, US, vol. 8, 1996, pages 541-545, XP009016944 ISSN: 0897-4756</p> <p>cited in the application Chart I, compounds ML Experimental Section - Synthesis of ML complexes</p> <p style="text-align: center;">----- -/-</p>	1-4

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

22 October 2004

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28.01.2005

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/050706

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HANDA ET AL.: "Dinuclear Phenoxo-Bridged Nickel(II) Complexes of Macrocyclic Ligands with Cyano Groups Laterally Introduced on a Conjugated System within the Ligands" MOL. CRYST. LIQ. CRYST., vol. 342, 2000, pages 75-80, XP009036434 Cpd. 'Ni(fsaldmn)!' page 76	1-4
X	IWAMOTO ET AL.: "Synthesis of the copper(II) complex of bis(salicylideneamino)maleonitrile: '(2,3-dicyano-cis-2-butene-2,3-diiminomethyl)di-o-phenolato!copper(II)'" CHEMISTRY LETTERS, no. 4, 1976, pages 343-346, XP009036452 title compound	1-4
X	WÖHRLE ET AL.: "Catalysts" POLYMER BULLETIN, vol. 13, 1985, pages 57-64, XP009036446 Compound 3.Co page 58	1-4
X	LEDOUX ET AL.: "New Developments ind Molecular Engineering: From One- to Three-dimensional Metal Complexes" NATO ASI SERIES, SERIES 3. HIGH TECHNOLOGY, vol. 9, 1996, pages 145-158, XP009017003 Cpd. NiL page 154	1-5
X	EP 0 012 241 B (HOECHST AG) 16 February 1983 (1983-02-16) Examples	1-4
X	DE 26 11 697 A (ROTHKOPF HANS WERNER DIPL CHEM) 22 September 1977 (1977-09-22) Examples 1-3, 6	1-4
X	US 4 265 632 A (PAPENFUHS THEODOR ET AL) 5 May 1981 (1981-05-05) Examples	1-4
A	PATENT ABSTRACTS OF JAPAN vol. 0091, no. 72 (M-397), 17 July 1985 (1985-07-17) & JP 60 044390 A (TDK KK), 9 March 1985 (1985-03-09) cited in the application abstract	1-10
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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/050706

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PATENT ABSTRACTS OF JAPAN vol. 1997, no. 10, 31 October 1997 (1997-10-31) & JP 9 164767 A (TOYO INK MFG CO LTD), 24 June 1997 (1997-06-24) abstract</p> <p>-----</p>	1-10

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/050706

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-10 (part)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: -

Present claim 1 relates to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Consequently, the the searchable subject-matter is

for the first identified invention

restricted on the subset of the compounds (I) as disclosed in claim 2, i.e. the compounds (IIa), (IIb), (IIc), (IId)

for the second identified invention

restricted on the subset of the compounds (I) as disclosed in claim 2, i.e. the compounds (III)

for the third identified invention

restricted on the subset of the compounds (I) as disclosed in claim 2, i.e. the compounds (IV)

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10 (part)

Metal complexes of formula (IIa), (IIb), (IIc), (IId) compositions thereof, optical recording media comprising these compounds, use of (IIa), (IIb), (IIc) and (IId) in the production of optical recording media and a method of producing an optical recording medium involving (IIa), (IIb), (IIc) and (IId)

2. claims: 1-10 (part)

Metal complexes of formula (III), compositions thereof, optical recording media comprising (III), use of (III) in the production of optical recording media and a method of producing an optical recording medium involving (III)

3. claims: 1-10 (part)

Metal complexes of formula (IV), compositions thereof, optical recording media comprising (IV), use of (IV) in the production of optical recording media and a method of producing an optical recording medium involving (IV)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/050706

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0012241	B	25-06-1980	DE 2850900 A1	12-06-1980
			DE 2964855 D1	24-03-1983
			EP 0012241 A1	25-06-1980
			JP 1486851 C	14-03-1989
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JP 60044390	A	09-03-1985	JP 1869598 C	06-09-1994
			JP 4075146 B	30-11-1992
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